87

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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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EXAMINER	
FAULK, DEVONA E	
ART UNIT	**PAPER NUMBER**
2615	

DATE MAILED: 05/18/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	09/577,399	SHI ET AL.	
	Examiner	Art Unit	
	Devona E. Faulk	2615	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *16 February 2006*.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-11 and 17-19* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-11 and 17-19* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *22 May 2000* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☒ All b)☐ Some * c)☐ None of:

1.☒ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

Response to Arguments

1. Applicant's arguments filed 2/16/2006 have been fully considered but they are not persuasive.

2. Regarding claim 1,the applicant asserts that the invention is a common digital interface which services two separate mixers and that this allows for switching on the fly. For example, if a first mixer is receiving a stream which is going to a digital recording device and the second mixer is receiving a stream which is being played real time, it is possible, when using a single codec handling both streams, to switch outputs on the fly. The examiner asserts that the claim language recites nothing of switching, stopping the recording of one stream and switching streams so as to listen to the previously recorded stream live. The applicant is arguing something that is not recited.

3. Regarding claim 3, the applicant asserts that the art must teach the claimed invention or a rationale to make the modification. Prior art Shuholm teaches wherein said digital interface includes a plurality of programmable ports (abstract, Figure 4) and a rationale for doing so is so that assignments could be changed using a separate means of control and without having to use more physical space for the system (column 1, lines 43-46) as cited by the examiner in the previous office action. The examiner is maintaining the rejection.

4. Claims 12-16 and 20-22 have been cancelled.

Claim Rejections - 35 USC § 103

5. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

6. **Claims 1,4,5,6 and 8** are rejected under 35 U.S.C. 103(a) as being unpatentable over Intel Corporation's AC '97 Component Specification (hereafter Intel) in view of *In Re Harza*, 274 F. 2d 669, 124 USPQ 378 (CCPA 1960).

Claims 1 and 5 share common features.

Regarding **claims 1 and 5**, AC' 97 discloses a codec (Figure 1) comprising:

a digital interface (digital interface of figure 1) including a first pair of stereo channels (Figure 1);

a first pair of digital to analog converters coupled to the first pair of stereo channels (Figure 1; D/A converters (DACs) which support a stereo PCM out channel);

an analog mixer (analog mixing block of Figure 1) outputting an audio program, said mixer coupled to the first pair of digital to analog converters;

a pair of analog to digital converters (ADCs) coupled to the analog-mixing block (Figure 1).

Intel, on page 28, section 5.1 teaches that the digital interface handles multiple inputs and output audio streams.

Intel fails to teach specifically of two stereo channel pairs, each coupled to a D/A converter (Figure 1 (1-3); Figure 4(93d,93e)) whose output is fed to a separate mixer (92b,92c; Figure 4).

It would have been obvious under duplication of parts, *In Re Harza*, 274 F. 2d 669, 124 USPQ 378 (CCPA 1960), to incorporate the additional D/A converters and mixer for the benefit of processing the second stereo channel separately. *In Re Harza* states that the mere duplication of parts has no patentable significance unless a new and unexpected result is produced. The result of having a duplicate pair of D/A converters and another mixer to accommodate a second stereo channel pair would still yield the same result of converting a digital signal to an analog signal and providing that signal to a mixer.

Furthermore, regarding **claim 5**, Intel teaches of a codec coupled to a processor (Audio Codec '97, PCI accelerator, Figure 2). All other elements of claim 5 are comprehended by the above apropos rejection of claim 1.

Regarding **claim 4,** Intel as modified by *In Re Harza* discloses wherein said digital interface has a programmably changeable output data rate. Intel further discloses on page 14 and pages 61-62 that the AC 097 analog component can perform fixed or variable sample rated DAC and ADC conversions. Thus data output from the digital interface can have a programmed changeable output data rate.

All elements of **claim 6** are comprehended by the rejection of claim 5.

Regarding **claim 8**, Intel as modified *In Re Harza* wherein said system can process two separate audio programs at the same time. Intel, on page 28, section 5.1 teaches that the digital interface handles multiple inputs and output audio streams. Kamiya teaches of processing two audio programs at the same time.

Regarding **claim 4,** Intel as modified *In Re Harza* discloses wherein said digital interface has a programmably changeable output data rate. Intel further discloses on page 14 and pages 61-62 that the AC 097 analog component can perform fixed or variable sample rated DAC and ADC conversions. Thus data output from the digital interface can have a programmed changeable output data rate.

7. **Claims 2 and 9** are rejected under 35 U.S.C. 103(a) as being unpatentable over Intel Corporation (Audio Codec '97) in view of *In Re Harza*, 274 F. 2d 669, 124 USPQ 378 (CCPA 1960) in further view of Malcolm, Jr. et al. (U.S. Patent 6,301,366).

Regarding **claims 2 and 9,** Intel as modified by *In Re Harza* fails to disclose but Malcolm teaches of further including a Sony/Phillips digital interconnect formatter (SPDIF). Malcolm discloses a single chip audio system including a SPDIF (column 12, lines 40-45). A SPDIF allows the transfer of audio from one file to another without the conversion to and from an analog format, which could degrade signal quality. It would have been obvious to modify Intel as modified by Harza by further including a SPDIF as taught by Malcolm in order to allow for the transfer of audio without degrading the signal quality.

8. **Claims 3 and 10** are rejected under 35 U.S.C. 103(a) as being unpatentable over Intel Corporation (Audio Codec '97) in view of *In Re Harza*, 274 F. 2d 669, 124 USPQ 378 (CCPA 1960) in further view of Shuholm (U.S. Patent 6,104,997).

Regarding **claims 3 and 10**, Intel as modified by *In Re Harza* fail to disclose but Shuholm teaches wherein said digital interface includes a plurality of programmable ports (abstract, Figure 4). It would have been obvious to one of ordinary skill in the art at the time of the invention to modify Intel as modified by Harza to include a plurality of programmably changing port assignments as taught by Shuholm in order that assignments could be changed using a separate means of control and without having to use more physical space for the system (column 1, lines 43-46).

9. **Claim 7** is rejected under 35 U.S.C. 103(a) as being unpatentable over Intel Corporation (Audio Codec '97) in view of *In Re Harza*, 274 F. 2d 669, 124 USPQ 378 (CCPA 1960) in further view of Mayo (U.S. patent 5,133,081).

Regarding **claim 7,** Intel as modified by *In Re Harza* fails to disclose but Mayo teaches of wherein said system may simultaneously play one audio program while recording another audio program. Intel as modified by Harza meets all elements of that claim. Intel teaches of a machine-readable media (40) capable of storing recorded karaoke data. Mayo discloses a system comprising two codecs capable of simultaneously recording and playing messages using the same recording medium (column 10, lines 42-46). It would have been obvious

to one of ordinary skill in the art at the time of the invention to use Mayo's concept of simultaneously recording and playing in order to allow simultaneous recording and playback.

10. **Claim 17** is rejected under 35 U.S.C. 103(a) as being unpatentable over Intel Corporation's AC '97 Component Specification (hereafter Intel) in view of *In Re Harza*, 274 F. 2d 669, 124 USPQ 378 (CCPA 1960) in further view of Shuholm (U.S. Patent 6,104,997).

Regarding **claim 17**, Intel discloses an article (computer) comprising a medium storing instructions (personal computer executes various signal processing such as D/A and A/D conversions; there is implicitly some medium that permits the computer to execute processing) that enable a processor-based system to:

receive at least two digital audio programs (Figure 1, Intel, on page 28, section 5.1 teaches that the digital interface handles multiple inputs and output audio streams);

converting each of said digital audio programs to an analog format (Intel's Figure 1 discloses converting an audio program to an analog format);

output the program to a port (Figure 1).

Intel fails to converting a second audio program to audio format but it would have been obvious under duplication of parts, *In Re Harza*, 274 F. 2d 669, 124 USPQ 378 (CCPA 1960), to convert the second digital channel to analog and to have and another port to output the second audio program for the benefit of processing the second stereo channel separately. *In Re Harza* states that the

mere duplication of parts has no patentable significance unless a new and unexpected result is produced. The result of having a duplicate pair of D/A converters and another output port to accommodate a second stereo channel pair would still yield the same result of converting a digital signal to an analog signal and providing that signal to a mixer.

Intel as modified by Harza fails to disclose but Shuholm teaches of programmably changing the assignment of said programs to said ports (abstract, Figure 4). It would have been obvious to one of ordinary skill in the art at the time of the invention to modify Intel as modified by Harza to include a plurality of programmably changing port assignments as taught by Shuholm in order that assignments could be changed using a separate means of control and without having to use more physical space for the system (column 1, lines 43-46).

Regarding **claim 18,** Intel as modified by Harza and Shuholm discloses but Intel teaches of wherein said digital interface has a programmably changeable output data rate. Intel further discloses on page 14 and pages 61-62 that the AC 097 analog component can perform fixed or variable sample rated DAC and ADC conversions. Thus data output from the digital interface can have a programmed changeable output data rate. It would have been obvious to have to modify Intel as modified by Harza and Shuholm to have the digital interface have a programmable changeable output data rate in order to be able to process different types of audio sources.

11. **Claim 19** is rejected under 35 U.S.C. 103(a) as being unpatentable over Corporation's AC '97 Component Specification (hereafter Intel) in view of *In Re Harza*, 274 F. 2d 669, 124 USPQ 378 (CCPA 1960) in further view of Shuholm (U.S. Patent 6,104,997) in further view of Mayo (U.S. patent 5,133,081).

Regarding **claim 19,** Intel as modified by Harza and Shuholm fails to disclose but Mayo teaches of further storing instructions that enable the processor-based system to play one audio program while recording another audio program. Intel teaches of a machine-readable media (40) capable of storing recorded karaoke data. Mayo discloses a system comprising two codecs capable of simultaneously recording and playing messages using the same recording medium (column 10, lines 42-46). It would have been obvious to one of ordinary skill in the art at the time of the invention to use Mayo's concept of simultaneously recording and playing in order to allow simultaneous recording and playback.

Conclusion

5. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any

extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Devona E. Faulk whose telephone number is 571-272-7515. The examiner can normally be reached on 8 am - 5 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Vivian Chin can be reached on 571-272-7848.

The Art Unit location of your application in the USPTO has changed. To aid in correlating any papers for this application, all further correspondence regarding this application should be directed to Art Unit 2615.The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

DEF

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